

REMARKS

Applicants thank the Examiner for the very thorough consideration given the present application.

Claims 1-25 are now present in this application. Claims 1, 15 and 22 are independent.

Reconsideration of this application is respectfully requested.

Rejections under 35 U.S.C. §103

Claims 1-2, 11-16 and 22-25 stand rejected under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent 6,100,954 to Kim in view of U.S. Patent 6,172,728 to Hiraishi and U.S. Patent 6,061,110 to Hisatake et al. (hereinafter, "Hisatake"). This rejection is respectfully traversed.

Complete discussions of the rejections are set forth in the Office Action and are not being repeated here.

Applicants respectfully submit that Kim is not a proper reference under 35 U.S.C. §103(a) because, at the time this invention was made, the subject matter in issue and the Kim patent application were either owned by the same person or subject to an obligation of Assignment to the same person, i.e., LG Electronics.

The Kim patent was assigned to LG Electronics on September 9, 1997, a fact that is of record in the USPTO.

The present invention was assigned on July 2, 1998 to LG Electronics. A copy of the Assignment document and an accurate translation of that assignment document are enclosed.

This invention subsequently became assigned to LG LCD Co., Ltd., which was spun off from LG Electronics effective January 1, 1999, and an assignment of this invention was filed in the Korean Intellectual Property Office on April 15, 1999.

Subsequently, LG LCD Co., Ltd. changed its corporate name to LG Philips Co., Ltd. as of September 1, 1999. Accordingly, as of September 1, 1999, this Application was finally assigned to LG Philips Co., Ltd from the LG LCD Co., Ltd.

Applicants respectfully submit that this statement of common assignment is sufficient to remove Kim as a reference, pursuant to the provisions of 35 U.S.C §103(c). As a result, the rejection is incomplete and fails to make out a *prima facie* case of unpatentability of the claimed invention under 35 U.S.C. §103(a), and should be withdrawn.

Moreover, in order to be fully responsive to the outstanding rejection, should the rejection not be withdrawn for the reasons stated above, Applicants present the following remarks.

Independent claims 1, 15 and 22 recite a combination of features regarding a liquid crystal display (LCD) including (1) a pixel electrode having portions thereof formed on the surface of the passivation layer but not over the thin film

transistor; and an upper substrate located above the pixel electrode, wherein an area between said pixel electrode and said upper substrate, and above said low reflective layer, is free of any black matrix or light shielding layer, or (2) a method of making the structure set forth in (1).

Applicants respectfully submit that this combination of elements as set forth in independent claims 1, 15 and 22 is not disclosed or made obvious by the prior art of record.

In regard to Kim, the Examiner has cited figures 1-6, which depict various embodiments. The Applicants submit that each embodiment shown in figures 1-6 includes a black matrix or light shielding layer (though not shown) on the upper substrate.

Referring to the portion of Kim in Col.1, line 65 to Col.2, line 12, key features of a method for manufacturing the conventional LCD shown in these figures are disclosed. Particularly, Kim provides as follows:

Second, a method for manufacturing a conventional AMLCD is reviewed. Two transparent substrates are prepared to construct an LCD. In general, the substrates are made of non-alkaline or soda glass. Different processes are applied to the two substrates. On the first substrate (upper plate), a color filter layer, a black matrix, common electrodes, and bus lines are formed. On the second substrate (lower plate), switching elements such as TFTs, pixel electrodes, and bus lines are formed.

This invention particularly relates to a second substrate of an AMLCD, on which TFTs are formed. Therefore, conventional methods for manufacturing the second substrate will be mainly described below.

Kim, Col.1, line 65 to Col.2, line 12

Claims 1 and 2 positively recite a device that is free of any black matrix layer, and claims 11-16 and 22-25 recite a method of forming a device that is free of any black matrix layer.

Thus, Kim, the base reference, contains a feature that the claims do not have.

In the second place, Kim is directed to a transmissive type LCD display device that has two transparent substrates. See, for example, col. 1, lines 25-30 and 61-65, for example, of Kim.

However, neither of the two secondary references applied in this rejection are transmissive type LCD display devices. In fact, neither Hiraishi nor Hisatake disclose transmissive type LCD displays. Both Hiraishi and Hisatake disclose reflective type LCD displays.

With respect to the black matrix layer feature of the claims, the Office Action turns to Hisatake to modify Kim, which Applicant submits employs a black matrix or light shielding layer on the upper substrate, to provide no black matrix or light shielding layer between the two substrates.

Hisatake discloses, in col. 3, lines 46-61, that light shielding layers are generally not used on reflecting type LCD displays because the display brightness

may be lowered extremely due to the fact that the reflective type LCD displays are incapable of controlling incident light.

Based on this teaching, the Office Action concludes that it would be obvious to not use a light shielding member or black matrix.

Applicants respectfully submit that this teaching of Hisatake does not apply to Kim's transmissive LCD display, because transmissive type LCD displays use backlighting and control their own brightness, which is just the opposite of reflective LCD displays.

Accordingly, one of ordinary skill in the art would have no incentive, based on Hisatake, whose teaching regarding generally not using a light shielding layer on the non-modulation region of the reflecting type LCD display, to eliminate a black matrix or light shielding layer.

With respect to the light shielding layer feature of the claims, the Office Action admits that Kim does not disclose having a low reflective layer formed on at least a portion of the gate line or the data line. To remedy this deficiency, the Office Action turns to Hiraishi, which is a different type of LCD display device. Whereas Kim discloses transmissive type LCD displays, Hiraishi discloses reflective type LCD displays. This difference is significant because transmissive LCD displays are designed for use in very low light conditions whereas reflective LCD displays are not.

Whereas it may be desirable, as disclosed in col. 6, lines 33-38 of Hiraishi, to provide a low reflective film preferably made of chromium oxide, tantalum nitride or the like on Hiraishi's gate lines 2 and source lines 3, the Office Action does not provide any objective evidence that it would be obvious to include such a feature in Kim's transmissive LCD display. In fact, the Office Action completely overlooks this difference between these two references.

Applicants respectfully submit that the Office Action has not provided proper motivation to one of ordinary skill in the art to provide a low-reflective layer on at least one of a gate line and a source line of Kim because the Office Action does not explain what effect such a low-reflective layer would have on the display quality of a transmissive type LCD display like that of Kim, and what display qualities it would affect.

To assume that providing a low-reflective film on the gate lines and the source lines of Kim to provide proper motivation to use such a feature in Kim by enhancing Kim's display qualities is nothing more than speculation, and it is well settled that a rejection based on Section 103 must rest on a factual basis, with the facts being interpreted without hindsight reconstruction of the invention from the prior art. In making this evaluation, the Examiner has the initial duty of supplying the factual basis for the rejection he advances. An Examiner may not, because of doubts that the invention is patentable, resort to speculation, unfounded assumptions or hindsight reconstruction to supply deficiencies in the

factual basis, See, In re Warner, 379 F.2d 1011, 1017, 154 USPQ 173, 178 (CCPA 1967), cert. denied, 389 U.S. 1057 (1968).

Moreover, in making a rejection under 35 U.S.C. §103, the prior art as a whole must be considered. The teachings of the applied references are to be viewed as they would have been viewed by one of ordinary skill in the art. Kimberly-Clark v. Johnson & Johnson, 745 F.2d 1437, 1454, 223 USPQ 603, 614 (Fed. Cir. 1984); In re Mercier, 515 F.2d 1161, 1165, 185 USPQ 774, 778 (CCPA 1975). "It is impermissible within the framework of Section 103 to pick and choose from any one reference only so much of it as will support a given position, to the exclusion of other parts necessary to the full appreciation of what such reference fairly suggests to one of ordinary skill in the art". In re Wesslau, 353 F.2d at 241, 147, USPQ at 393. In re Hedges, et al., 228 USPQ 685 (Fed. Cir. 1986).

Accordingly, the Office Action does not provide proper motivation to one of ordinary skill in the art to apply a low-reflective film to Kim's gate lines and/or source lines.

As a result, the Office Action fails to provide proper motivation for one of ordinary skill in the art to modify Kim by removing a black matrix and/or light shielding layer from Kim.

This absence of a *prima facie* case of proper motivation to modify Kim in view of Hiraishi and/or Hisatake means that the Office Action fails to make out a *prima facie* case of obviousness of the claimed invention because a showing of a suggestion, teaching, or motivation to combine the prior art references is an “essential evidentiary component of an obviousness holding.” C.R. Bard, Inc. v. M3 Sys. Inc., 157 F.3d 1340, 1352, 48 USPQ2d 1225, 1232 (Fed. Cir. 1998).

Thus, reconsideration and withdrawal of this rejection of claims 1, 2, 11-16 and 22-25 are respectfully requested.

Claims 3, 4, 6-8, 10, 17-19 and 21 stand rejected under 35 U.S.C. §103(a) as unpatentable over Kim, Hiraishi and Hisatake, as applied above, and further in view of U.S. Patent 6,503,772 to Ohtsu et al. (hereinafter, “Ohtsu”), and U.S. Patent 6,259,200 to Morita et al. (hereinafter, “Morita”).

This rejection is respectfully traversed.

Initially, Applicants respectfully submit that Kim has been removed as prior art under 35 U.S.C. §103(a) and, as a result, this rejection does not make out a *prima facie* case of unpatentability of the claimed invention and should be withdrawn.

Moreover, in order to be fully responsive to this rejection in the event that Kim is not overcome by the showing presented above, Applicants respectfully submit that claims 3, 4, 6-8 and 10 depend from claim 1, and claims 17-19 and 21 depend from claim 15. For reasons stated above, claims 1 and 15 are not

obvious in view of Kim, Hiraishi and Hisatake. Moreover, neither Ohtsu nor Morita remedy the aforementioned deficiencies in Kim, Hiraishi and Hisatake. Accordingly, claims 3, 4, 6-8, 10, 17-19 and 21 are not obvious over Kim, Hiraishi and Hisatake in view of Ohtsu and Morita.

Accordingly, the claimed invention recited in claims 3, 4, 6-8, 10, 17-19 and 21 is not obvious in view of the applied references.

Furthermore, Ohtsu is not a proper reference because Applicants have filed a certified copy of their Korean priority Application, which has been acknowledged by the Examiner on the PTO-326, and are enclosing an accurate English language translation of their Korean priority Application, which has an effective date of April 15, 1999, which is well prior to the effective filing date of the Ohtsu reference.

Additionally, Morita includes a black mask 62, thereby teaching away from modifying the base reference to do away with the black matrix mask, which is a feature of the claimed invention.

Accordingly, reconsideration and withdrawal of this rejection of 3, 4, 6-8, 10, 17-19 and 21 are respectfully requested.

Claims 5, 9 and 20 stand rejected under 35 U.S.C. §103(a) as unpatentable over Kim, Hiraishi and Hisatake, Ohtsu and Morita, and further in view of "Applicant admitted prior art (AAPA)".

This rejection is respectfully traversed at least for the reasons that the claims from which claims 5, 9 and 20 are traversed, above.

The fact that CrOx has a reflectivity of about 3% does not remedy the aforementioned deficiencies of the applied reference combination.

Accordingly, reconsideration and withdrawal of this rejection of claims 5, 9 and 20 are respectfully requested.

Conclusion

All of the stated grounds of rejection have been properly traversed, accommodated, or rendered moot. Applicants therefore respectfully request that the Examiner reconsider all presently outstanding rejections and that they be withdrawn. It is believed that a full and complete response has been made to the outstanding Office Action, and as such, the present application is in condition for allowance.

If the Examiner believes, for any reason, that personal communication will expedite prosecution of this application, the Examiner is invited to telephone Robert J. Webster, Registration No. 46,472, at (703) 205-8034, in the Washington, D.C. area.

Prompt and favorable consideration of this Amendment is respectfully requested.

Attached hereto is a marked-up version of the changes made to the application by this Amendment.

Application No.: 09/550,282
Art Unit: 2871

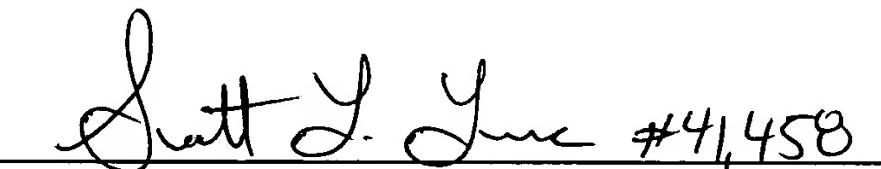
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If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or credit any overpayment to Deposit Account No. 02-2448 for any additional fees required under 37 C.F.R. §§1.16 or 1.17; particularly, extension of time fees.

Respectfully submitted,

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JTE/RJW/adt *Opn*

Enclosure: English language Translation of Korean Application No 99-13365
July 2, 1998 Assignment (in Korean and English)